AMENDMENTS TO THE SPECIFICATION

Please replace paragraph **[001]** with the following amended paragraph:

[001] This application is a continuation-in-part application of United States Patent Application Serial No. 10/617,006, which was filed on July 10, 2003 and entitled "Single-Fiber Bi-Directional Transceiver", which claims priority to and the benefit of U.S. Provisional Patent Applications No. 60/394,774, filed July 10, 2002 and entitled "Single-Fiber Bi-Directional Transceiver"; No. 60/397,969, filed July 23, 2002, entitled "Plug-in Module Having a Receptacle for Receiving Bi-Directional Data Transmission"; No. 60/397,971, filed July 23, 2002, entitled "Plug-in Module Having a Receptacle for Receiving Bi-Directional Data Transmission"; No. 60/397,967, filed July 23, 2002, entitled "Optical Circulator Using a Prism for Bi-Directional Communication"; No. 60/398,056, filed July 23, 2002, entitled "Low Cost Optical Circulator for Bi-Directional Communication"; No. 60/397,851, filed July 23, 2002, entitled "Optical Circulator with Dual Receive Path for Bi-Directional Communication"; No. 60/397,728, filed July 23, 2002, entitled "Optical Circulator with Dual Receive Path and Quarter Wave-Plate for Bi-Directional Communication"; No. 60/397,970, filed July 23, 2002, entitled "Optical Circulator with Adjacent Transmit and Receive Ports for Bi-Directional Communication"; No. 60/397,852, filed July 23, 2002, entitled "Optical Circulator with Beam Displacer for Bi-Directional Communication"; No. 60/397,963, filed July 23, 2002, entitled "Optical Circulator with Dual Beam Displacers for Bi-Directional Communication"; and No. 60/395,413, filed July 13, 2002, entitled "Optical Pump Module"; all of which are hereby incorporated by reference in their entireties.

Please replace paragraph **[007]** with the following amended paragraph:

[007] The third conventional method of bi-directional communication along a single fiber-optic cable involves the use of lasers with different wavelengths. Commonly a 1550 nanometer distributed feedback (DFB) laser is used to propagate an optical signal in one direction and a 1310 nanometer vertical cavity surface emitting laser (VCSEL) is used to propagate the optical signal in the opposite direction. One drawback with this configuration is that it requires two types of transceivers that are complementary, with different transceivers being used at the two communications devices that are engaging in the bi-directional communication. For example, one of the two communications devices must have a transceiver with a 1550 nanometer transmitter and a 1310 nanometer ~~transmitter~~ receiver. In contrast, the other of the two communications devices must have a complementary transceiver having a 1310 nanometer transmitter and a 1550 nanometer receiver. Requiring two types of transceivers increases production and maintenance costs. It would therefore be beneficial to create a device in which all transceivers could be the same. A second drawback of this type of approach to bi-directional communication is that the 1550 nanometer DFB laser is very expensive as compared to the 1310 nanometer VCSEL. Therefore it would be beneficial to use only the cheaper 1310 nanometer VCSEL.

Please replace paragraph **[035]** with the following amended paragraph:

[035] Each connector 202 may receive a bi-directional communications module 208. The bi-directional communications module 208 includes a module casing 210 configured to house or provide attachment points for other components included in the communications module 208. The bi-directional communications module 208 further includes a duplex connector ~~212~~ 216

disposed on module casing 210 that includes male connectors 212, 214 configured to mate with transmit node 204 and receive node 206 of duplex connector 202a-202n. The bi-directional communications module 208 also includes a ~~connector~~ pigtail lead 218 having a patch panel connector 220 disposed thereupon. The ~~connector~~ pigtail lead 218 is fixably or releasably connected to bi-direction communications module 208. By including patch panel connector 220, pigtail lead 218 can be coupled to a patch panel 222 that provides access to the optical network. In one embodiment, optical data is transmitted by communication panel 200 through transmit node 204. The optical data enters bi-directional module 208 through first male connector 214. As described herein below, a circulator internal to bi-directional module 208 causes the optical data to leave bi-directional module 208 through ~~connector~~ pigtail lead 218. The optical data is then transmitted to the optical network through patch panel 222.

Please replace paragraph **[036]** with the following amended paragraph:

[036] Simultaneously data to be received by communication panel 200 is transmitted through the optical network to patch panel 222. The patch panel 222 transmits the data through pigtail lead ~~214~~ 218, and to the circulator internal to bi-directional module 208. As described herein below, the internal circulator transmits the optical data to second male connector ~~216~~ 212 and so to receive node 206 of communication panel 200.

Please replace paragraph **[039]** with the following amended paragraph:

[039] An exemplary circulator is depicted in Figure 3. ~~As shown,~~ Referring to Figure 3, shown is one version of a circulator 300 which functions to provide bi-directional duplex

communication within a plug-in module according to one aspect of the present invention. The circulator 300 includes an optical core 302 that optically communicates ~~ions~~ with a transmit fiber 306, a receive fiber 308, and a network fiber 310 by way of lenses 330 and 340. The transmit fiber 306, which is polarization maintaining (PM), and receiver fiber 308 optically couple to the transceiver end of optical core 302, while network fiber 310 optically couples to the network end of optical core 302.

Please replace paragraph **[043]** with the following amended paragraph:

[043] To cause optical circulator 300 to be optically non-reciprocal, Faraday rotator 344 is inserted in between the two wedges 342 and 346. This rotator 344 rotates the polarization plane of an input optical signal based on the initial polarization orientation of the input beam. This rotator 344 may be in contact with at least one surface of each wedge 342 and 346. Alternatively, rotator 344 may be separated from each wedge 342 and 346, thereby creating air gaps between rotator 344 and wedges 342 and 346. Rotator 344 may be fabricated from a magneto-optic material, such as a YIG crystal, or other materials that provide the optical properties or characteristics associated with rotator 344.

Please replace paragraph **[054]** with the following amended paragraph:

[054] The optical core 450 of circulator 400 has a similar configuration to optical core 302 of circulator 300. To aid with explanation, an external magnet 420 is illustrated as at least partially surrounding optical wedges 408 and 412, and Faraday rotator 410. The magnet 420 creates the magnetic field that causes polarization shifts in the optical signals as they propagate through Faraday rotator ~~412~~ 410 and non-latching optical wedges 408 and 412.

Please replace paragraph **[056]** with the following amended paragraph:

[056] The beam 430 passes through a collimating lens 406, where it is directed into and is bent by optical core 450, i.e., the assembly of wedge 408, a magneto-optic material, such as ~~a~~ the Faraday rotator fabricated from a YIG crystal (garnet) 410, and ~~a~~ the wedge 412. The resultant beam 430 is focused into single fiber pigtail 414 by a lens 416, before propagating through network port 432 and associated optical fibers, illustrated by dotted lines.

Please replace paragraph **[059]** with the following amended paragraph:

[059] It is understood that the communications module of the present invention may be practiced using any circulator with an internal structure capable of performing the required functions. Substantially any circulator design may be used that outputs light input from port A at port B and light input from port B at port C. In other words, the circulator need not be able to accept light input at port C. The circulators described herein require the input light from port A to be linearly polarized and the polarization direction to be aligned with the optical axis of the circulator core. Numerous other examples of particular structural components for a circulator for use in the present invention are disclosed in co-pending U.S. Patent Application Serial No. 10/623,829, filed on 07/21/2003, and entitled "Optical Circulator for Bi-Directional Communication", the contents of which were previously incorporated by reference in this application.

Please replace paragraph **[109]** with the following amended paragraph:

[109] Optically communicating with the opposite end of optical circulator 1320, i.e., the network port or port communicating with the network is an optical pigtail 1330. A first end 1332 of optical pigtail is mounted to a second end 1322 of casing 1302, either fixably or releasably, so that it communicates with the network port of optical circulator 1320. Extending from first end 1332 of optical pigtail 1330 is a single optical fiber that both transmits and receives optical data from the network. Disposed upon second end 1336 of pigtail 1330 is a patch connector 1338 so that the module may be selectively coupled to patch panel ~~216~~ 222 (Figure 2). Alternatively, another connector may be mounted to second end 1336 of pigtail 1330.